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ABSTRACT

Intended to be utilized as an instructional unit in preservice or inservice vocational teacher education or as a part of a total performance-based teacher education program, this module is one of two modules developed to train vocational personnel how to install and manage competency-based instructional (CBI) programs. These two modules were designed as prototypes for the development of an entire series of teacher education modules intended to provide training in all the forty-five teacher competencies identified as being essential to the installation and management of CBI in secondary and postsecondary schools. (The full list of competencies, its development, and plans for the additional modules are described in a separate report, CE 013 792). The format and structure of these modules include the following components: cognitive learning experiences; practice and planning experiences; alternative and optional experiences; application experiences; and assessment. The terminal objective of this module is to organize the vocational program to install CBI. Providing the user with the background information about the organization and management of CBI, this module also provides the following two practice activities to help the user apply this information in installing a CBI system: (1) demonstrate knowledge of the principles and procedures involved in organizing a vocational program for the installation of CBI and (2) critique the performance of a teacher in a given case study describing how the teacher organized and managed a vocational program for CBI. (BM)

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ED152962

ORGANIZE THE VOCATIONAL PROGRAM TO INSTALL COMPETENCY-BASED INSTRUCTION

MODULE K-2

Performance Element Nos. CBI 25, 26, 27, 34

The Center for Vocational Education
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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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- Generating knowledge through research
- Developing educational programs and products
- Evaluating individual program needs and outcomes
- Installing educational programs and products
- Operating information systems and services
- Conducting leadership development and training programs

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FOREWORD

The competency-based approach to vocational instruction has caught the imagination of vocational educators across the country. Secondary and post-secondary schools are installing competency-based instruction (CBI) in new programs, and are converting many existing traditional programs to CBI as suitable materials and trained instructors become available.

If competency-based vocational instruction is to reach its full potential, teachers must be prepared to install and conduct CBI programs. At present, vocational teachers are typically not prepared by training or experience to effectively utilize this approach. Teacher education programs will need to address this problem.

This teacher education module is one of two designed to assist vocational teacher educators to prepare teachers for CBI. It employs the performance-based approach and utilizes a format similar to that of The Center's Professional Teacher Education Module Series, now available to the profession through the American Association for Vocational Instructional Materials (AAVIM). The 100 performance-based teacher education (PBTE) modules are organized into ten instructional categories, A through J, while this and succeeding modules in the series on competency-based instruction are designated as Category K. Thus, this module (K-2) and the preceding one (K-1) are seen as needed extensions of The Center's PBTE curriculum. They may be included as part of a total PBTE program, or may be utilized as an instructional unit in a conventional teacher education program, either preservice or inservice.

Teacher competencies important to CBI were identified in a three-step process: (1) a comprehensive search of the literature was made to identify implied competencies, (2) a select group of leading educators experienced in CBI used the DACUM (Developing A Curriculum) competency-identification approach in a workshop setting, and (3) the two lists were merged and refined. A total of 45 competencies were identified as being unique to CBI or as having special application to CBI. A series of 12 modules is envisioned as being necessary to deliver on all 45 competencies. The present two modules are those judged by the project's national advisory committee as being most urgently needed by teacher education institutions. It is planned that the remaining ten will be completed as funding becomes available.

Thanks are extended to Glen Fardig and Karen Quinn, authors of this document, to Lois Harrington for valuable editorial assistance, and to Debbie Parsley for typing the manuscript. Glen Fardig also served as Director of the CBI Project from which these modules resulted.

Robert E. Taylor
Executive Director
The Center for Vocational Education

INTRODUCTION

Good organization and management is the hallmark of every effective vocational program, but it is particularly essential for a program using the competency-based approach to instruction. Competency-based instruction (CBI) is systematic in design, and for the system to function properly all the parts must be organized and managed to contribute to the desired final result...the production of competent workers.

In modularized CBI programs, the modules (and other learning materials) must be available to students right when they need them; tools and equipment must be ready for a variety of activities; students should be able to get help from the resource person (instructor) any time they reach a difficulty; the resource center should be fully supplied and convenient for student use; and assessment of student performance should take place when the student is ready, not according to the teacher's schedule. All of this will require designing the system carefully, developing necessary procedures, drawing up the needed record-keeping forms, and perhaps reorganizing facilities. Most of all it will require the instructor to think in terms of the individual student's learning needs rather than making plans for whole class groups.

There is no question but that the organization and management of a CBI program places heavy demands on the instructor. It is also true that these demands can be met by teachers who are prepared for the task. Even though students in a CBI program are required to take greater responsibility for their own education,

they also will need more specialized and individualized attention from the instructor. The fact that both instructors and students are working harder in CBI programs is a fair indication that more is being accomplished. A frequently heard comment in a CBI classroom is, "We wouldn't have it any other way."

This module is designed to help you achieve competence in organizing and managing a vocational program for competency-based instruction. The skills involved are basic to your success as an instructor in such a program. With good organization and management, the potential of CBI for the improvement of occupational training is much more likely to be realized.

About This Module

Objectives This module includes three objectives:

Terminal Objective: While working in an actual school situation, organize the vocational program to install competency-based instruction. Your performance will be assessed by your resource person, using the Teacher Performance Assessment Form, pp. 41-43 *(Learning Experience III)*.

Enabling Objectives:

1. After completing the required reading, demonstrate knowledge of the principles and procedures involved in organizing a vocational program for the installation of competency-based instruction *(Learning Experience I)*.

2. Given a case study describing how a teacher organized and managed his vocational program for CBI, critique the performance of that teacher *(Learning Experience II)*.

Resources A list of the outside resources which supplement those contained within the module follows. Check with your resource person (1) to determine the availability and the location of these resources, (2) to locate additional references in your occupational specialty, and (3) to get assistance in setting up activities with peers or observations of skilled teachers, if necessary. Your resource person may also be contacted if you have any difficulty with directions, or in assessing your progress at any time.

Learning Experience I

Optional

- *A vocational program* using competency-based instruction which you can visit.

Learning Experience II

Optional

- *Peers* to work with you in planning management procedures for CBI.

Learning Experience III

Required

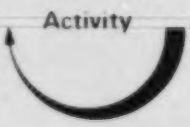
- *An actual school situation* in which you can organize the vocational program to install competency-based instruction.
- *A resource person* to assess your competency in organizing the vocational program to install competency-based instruction.

For information about the general organization of each module, general procedures for their use, and terminology which is common to the CVE modules, see About Using The Center's PBTE Modules on the inside back cover.

Learning Experience I

OVERVIEW

After completing the required reading, demonstrate knowledge of the principles and procedures involved in organizing a vocational program for the installation of competency-based instruction.



You will be reading the information sheet, Managing the Competency-Based Vocational Program, pp. 7-22.

You may wish to visit a vocational program that is using the competency-based approach to instruction to observe a management system in operation.

You will be demonstrating knowledge of the principles and procedures involved in managing a CBI program by completing the Self-Check, pp. 25-26.

You will be evaluating your competency by comparing your completed Self-Check with the Model Answers, pp. 27-29.

For information on organizing and managing a CBI program, including providing a resource center, devising record-keeping forms and procedures, organizing the physical facilities, storing and managing student instructional materials, and managing the individual learning situation, read the following information sheet:

MANAGING THE COMPETENCY-BASED VOCATIONAL PROGRAM

A vocational teacher installing a competency-based instructional system must be prepared to manage a learning situation that is quite different from that of conventional programs. Students will be engaged in many learning activities at several levels of achievement, and they will be working at varying rates. At any one moment in the instructional period, some students will need supervision of their laboratory work, one or two may want to get started working on a new module in the occupational series, several may have questions about the reading they are doing in their modules, one may want advice about arranging to visit a field site as an optional activity, and two students may be ready for the instructor to observe and assess their performance of a required skill.

The number of student activities and needs in an individualized CBI program places heavy demands on the managerial ability of the instructor. If the instructor attempts to cope with these varied demands by reimposing a lock-step organization in which all students begin and complete each module at the same time, with group instruction and group testing, a great deal of the value of CBI will have been lost. If the instructor uses

individualization with insufficient organization, confusion and frustration will likely be the result.

Your role as a successful instructor in a CBI program will be increasingly that of a learning manager, rather than a giver of information. In order to fulfill this new role you will need to know at all times (1) the status and progress of each student in the program, (2) the resources, materials, and equipment required by students in the immediate future, and (3) the problems students are likely to have with each module or competency as they work through the program.

Record Keeping in a CBI Program

In order to know the status and progress of each student, complete records of student achievement are required. In some CBI programs, all students will be working to complete the same designated series of competencies. Other programs will encourage each student to have a training program that is individually designed for his or her particular personal and occupational goals. In either case, an official record card should be on file for each student, showing the competencies that constitute the agreed program of studies. A copy of this record should be available to you constantly as you counsel and advise students in their daily learning activities.

As students complete the work of each learning package and demonstrate the necessary competency, a record must immediately be made of their achievement. The record forms and record-keeping procedures need not be complex, but they must be more detailed than traditional classroom grading procedures, and must

be accurate. Above all, you must be scrupulous in keeping student progress records absolutely up to date...trusting to memory and doing record keeping in "batches" at the end of the day or the week simply will not do.

At the minimum, a current student progress record should include the following data: (1) the student's complete planned program of occupational competencies (or modules), (2) the date the student began to work on any given module, (3) the dates of any final performance tests that required the student to recycle or redo parts of the module, (4) the date the given module was successfully completed, and (5) the final rating on the competency (if this is appropriate to the learning materials used). You should enter this data on the student's record sheet as soon as each event occurs. (It is convenient to carry these record sheets in a notebook so they are at hand at all times.)

Typically, in a CBI program, the student's performance of a competence is rated against a checklist. After it has been completed, you should place each checklist in the student's permanent file folder. Sample 1 is an example of a student record sheet suitable for a CBI program.

In addition to an accurate record of the individual student's achievement, you will need to maintain some form of chart which records the progress of the total student group. It is helpful for students to know how they are progressing toward their ultimate goal--it is essential for the instructor to be able to spot individual students who may be having learning difficulties or motivation problems. Teachers report that in individualized CBI

programs it is easy for a student to get "lost," as it were, making little or no progress without anyone noticing the situation. A wall-type progress chart of the kind that vocational teachers have used for many years will be very valuable in keeping student and instructor alike aware of individual and class achievement. The units of progress across the top of the chart should, of course, be the modules or competencies that constitute the occupational program. Sample 2 is an example of a progress chart which could be used in a CBI program.

It is true that, for some students in a CBI program, achievement will not take the form of a completely orderly progress from one competency to the next. Progress may be sporadic because an essential piece of equipment is in heavy use, a field experience may be dependent on the season, or simply because the student discovers some kind of personal block. It is usually permissible for students to suspend work on one competency for a while in order to move on to another. You should be thoroughly aware of this, however, and get the student back in sequence as soon as he or she is ready to proceed again.

Some technical institutes and community colleges are installing computer programs for maintaining achievement records of students in competency-based occupational programs. The periodic printouts furnished the instructor can be a rich source of information and can aid in identifying students with achievement problems as well as reveal the need for curriculum revision. If your institution utilizes computer data processing, it is to your advantage to furnish it with accurate data and to learn how to

Sample 1

COMPETENCY ACHIEVEMENT RECORD

Occupational Training Program _____

Student's Name _____

Program Beginning Date _____ Prcgram Completed _____

Instructor _____

		Dates		
Module No.	Title	Started	Recycle	Achieved

Sample 2

CLASS PROGRESS CHART

Class Period _____ Semester _____

	Modules								
Students	A-1	A-2	A-3	A-4	A-5	B-1	B-2	B-3	B-4
Jones									
Smith									
Roberts									
Ernest									

interpret the resulting information output. The school's registrar will be of great help to you in both of these tasks.

Organizing the Physical Facilities

Some changes in the physical organization of the vocational classroom and laboratory may be necessary to help ensure good management of the CBI program. This is in addition to the provision of a resource center, to be discussed later. You probably will not need to make many major changes, at least until you have gained a great deal more experience in using the competency-based approach.

One item that must be considered is how to store and distribute the instructional materials themselves--the learning packages, modules, or LAPs. For some occupational programs (distributive education programs using the IDECC materials, for example) this is an important problem. The modules can be numerous and voluminous, they need to be carefully kept in correct order and in good condition, and must be readily available to instructor and students. Probably the best solution is to keep the stock of new unused modules in three- or four-drawer file cabinets, stored in logical sequence, and neatly labeled. For modules that are currently being worked on by students in the class, you can provide cabinets or wall hung "pigeon hole" compartments, with a space assigned to each student. It is important that students have an organized and secure place for modules in process, so that they don't lose or misplace their work and become discouraged. Modules that have been completed by students

can be put into a temporary storage cabinet, ready for checking and perhaps recycled into the module stock.

If the school's budget doesn't run to fine metal file cabinets, sturdy cardboard boxes can be made to serve (see the school librarian for boxes from the book bindery, or the supermarket for boxes in which heavier items are shipped). No matter how simple the equipment, good organization here is all-important because of the sheer volume of materials that must be controlled.

Another possible change in the physical setting is the arrangement of class seating. A vocational program using the CBI approach is much less likely to need the usual rows of tablet chairs facing the chalkboard--an arrangement that is best suited to group instruction. You can probably dispense with such seating, and instead you may find it comfortable to set up little groups of two or three tablet chairs in several spots around the laboratory. These groupings, out of the traffic, can serve as stations for impromptu conferences between instructor and student, or study areas for students who want to refresh their memories before going on to the next laboratory activity. If yours is a vocational subject involving considerable technical data, you and your students might find it helpful to have small portable chalkboards available at these study spots.

In some CBI programs, it might be highly desirable to have an area in the facility set aside just for assessing the students' final performance. The assessment procedures are likely to be considerably more structured, complex, and time consuming than in conventional programs. Anything you can do to organize the

laboratory to facilitate the assessment function will be extremely helpful to you. For example, a business and office program would benefit from having a small semi-private area equipped with all required machines and supplies where the student could take the performance tests under the observation of the instructor. This would provide a minimum of distraction and afford the privacy that is very desirable for a frank and open discussion of the student's performance. An electronics program could set aside a bench with all the major test instruments installed and ready for use in the assessment procedures.

The Resource Center in a CBI Program

A "resource center" is an important and unique element of an effective competency-based vocational program. This facility (also sometimes called a "learning center" or "module laboratory") may function as a library, study room, media viewing room, or a counseling area, depending on the need. Working in the resource center, the vocational student might select from the storage file the next module on his or her schedule, sit at a table to read the necessary information sheets, get some additional information from a reference book located on a nearby shelf, locate a specific slide/tape presentation as directed in the module and look at it on a slide/tape projector which is set up in a carrel, and fill in a worksheet or respond to some self-check items included in the module. During this time in the resource center the student may be working alone or with another student. Some questions or difficulties may arise that require the assistance of the vocational teacher. After preliminary work in the resource center,

the student may go out to the laboratory to work on the skill, then return for additional study if he/she runs into a problem.

All this illustrates that the vocational student in a program using the CBI approach must have convenient access to study tables, reference materials, and media materials and equipment, and needs to have the teacher available for guidance. The resource center is an area designed to provide all this, and to permit the student to work at his/her own pace to complete the work of the module. The environment should be attractive, and should tend to encourage and support the student in the completion of the module.

As a vocational teacher in a school that is based on the CBI approach, you may find that resource centers have already been set up and are in operation. In a newly organized CBI program, you may have the responsibility to design and equip the resource center completely. In either case, you will need to be sure that the facility serves your program as effectively as possible.

The demands of individual occupational programs will vary, of course, as will the amount of money the school may be able to allot to establishing and maintaining a resource center. However, here are the items you should try to include in just about any CBI resource center:

- Storage for instructional materials. There should be file cabinets for modules or learning packages (lockable or not, depending on your management system and your student body). Shelves will be needed for text and reference books, pamphlets, and other printed matter. File boxes or storage drawers can contain slides, audio cassettes, videotapes, and film loops. All of this should be organized so as to be easily accessible and easy to maintain control.

- Study and work tables. Tables are needed for many student learning activities, including reading, writing self-check responses, practicing paper and pencil competencies, and planning project work. The number of study tables will vary according to the programs to be served, but a rough approximation would be seating space for at least 25 percent of the number of students in the program.

- Individual study carrels. Carrels may be purchased or made in the school shops, but they should provide for the installation of media equipment, the necessary electrical wiring and outlets, adequate lighting, and shelving for reference materials. If the program's instructional materials rely heavily on media, several fully equipped carrels may be required.

- Counseling area. Some space with table and chairs should be set aside for teacher counseling. The student should be able to come to the instructor, with technical problems, and together they should have a relatively quiet area in which to work together.

- Media equipment. Individualized competency-based vocational programs usually involve heavy use of instructional media. The versatile slide/tape projector has become extremely popular in recent years, and should now be considered a basic piece of equipment for the resource center. Cassette-type tape recorders should also be included. Now becoming widely used are videotape playback units (3/4" color cassettes have become the standard). Depending on your program, you may also want an 8mm film loop projector and an overhead projector. It is best to provide students with individual headphones for all audio equipment so as not to disturb others working in the area. It is probably a wise idea to start the CBI program with what is considered a minimum of equipment, with provision to quickly add more units if and when the need becomes apparent.

The resource center for a CBI vocational program may be located in one of several places within the school. It may be a part of the school's main library, under the management of the library staff. This may be efficient in terms of the purchase and control of materials, and it may remove many management responsibilities from the vocational teacher. It may, however, have some disadvantages in accessibility for students and teachers alike. A central location, for example, may not be very helpful

to the computer programming student who needs to ask a technical question while working on a module, and whose instructor is away in another wing of the building. The student coming in from the dairy barn or the auto mechanics laboratory to review a slide/tape may not feel particularly comfortable in plush library surroundings.

If there are a number of vocational programs using the CBI approach, the resource centers may be decentralized. There may be a resource center established, for example, for the building trades cluster, another for business and office practice, and a third for the technical programs, each located close to the appropriate classrooms and laboratories. The materials for the subject programs can be conveniently organized and managed by a trained aide or clerk. These subject-area resource centers can be well managed, quiet, and reasonably convenient. Of course, the student still does not have the immediate help of the instructor, but a well-versed aide can be of considerable assistance.

If it is possible, you may want to arrange to have the resource center right within your own program facility. You will need to provide a fairly quiet and clean area, separated by some means from the more active and distracting aspects of the program. Such a resource center can be located in one corner of the vocational laboratory, in the classroom area, or in an alcove or room immediately adjacent to the laboratory. Sometimes a shop balcony is available. It can be set off from the rest of the facility by bookcases or shelving, glass dividers, or movable partitions.

You should organize the materials so students can locate what they need without trouble, and so you can maintain control of your resources. Putting all required materials for a particular module into a single file box is one solution. The Module Box can be clearly marked and shelved in proper order. Because students are acutely aware that these materials are essential to their own progress in a CBI program, there are usually few difficulties with loss.

More and more competency-based programs are locating their resource centers right in the laboratory or classroom. Even though this does place more responsibility on the instructors, they prefer this to being separated from the work of their students, as happens when a central location is used. You will probably want to work for this in your own CBI program.

Preparing to Use Modules

It is essential for you to be thoroughly prepared to use the modules (or learning packages) before your students begin to work with them. You need to be prepared for the whole modularized program, of course, but you also must prepare each day for the modules that you expect your students to be using in the following period. Only through this kind of continuing preparation will you be able to manage your CBI program smoothly. Do not expect to spend less time in preparing for instruction than in a conventional program. Even though you will probably not need to make formal plans for group lectures or lessons, many other instructional planning activities are necessary.

Each day check the Progress Chart to identify the modules you expect your students to begin work on during the next class session. Take out a copy of the module; reread it and its related references. Review the learning activities included in the package, and perhaps practice the skills covered in the module if you haven't performed them in some time. Make notes at points that you think students may need some specific assistance.

Be prepared for the needs of the students by identifying and gathering all the resources required by the new modules. Check out any equipment they will be using, be sure that the required supplies are available, and get from storage any special learning aids (models, mock-ups, etc.) that will help them complete the work of the module and acquire the requisite skill. If substitutions must be made because a resource is not available, this is the time to arrange for the best possible alternatives. It will cause you unnecessary difficulties if you wait until students are at the point of being held back by some deficiency before you do anything about it.

As in any well-managed vocational program, the instructor can delegate a good many routine management procedures to the students themselves. It is a tenet of competency-based instruction that students should assume increasing responsibility for their own learning and for the achievement of the target competencies. With proper orientation, therefore, students can work cooperatively with the instructor to help manage a good many aspects of the CBI program--such as in caring for the instructional materials, scheduling the use of laboratory equipment,

arranging for the final performance evaluations, and supervising the resource center. Schools with CBI programs are reporting clearly improved cooperative attitudes among students, a greater sense of responsibility, and fewer management problems than in comparable conventional programs.

Managing the Individualized Learning Situation in a CBI Program

In any vocational class there are likely to be some students who learn rapidly and who move through the program at a fast pace, and others who work and learn much more slowly. A program using the competency-based approach will be no different in this regard, but the management of slow and fast learners in such a program may pose some unique problems. It is one of the basic principles of CBI that each student should be permitted to work and learn in a manner that suits him/her best. It is up to the instructor to organize and manage the learning environment so that this can actually take place. The final goal is that the student should have the time necessary to succeed--speed of accomplishment is secondary.

In actual practice it is not likely that every member of the class will be working on a different competency. Typically, students tend to form three groups of learners who will be working on modules together: (1) a small group of students who learn rapidly and achieve competencies with ease, (2) the majority of the class who progress at a moderate rate, and (3) a few students who work slowly and achieve competence with difficulty. None of these groups should be characterized as "bad" or "good," but

they are certainly different from each other. You must learn to work in a setting where several student activities are going on at the same time, and must be able to shift teaching strategies as you work with individual students. Students, too, will need help in getting accustomed to a diversified environment. The more capable students will probably find this stimulating; slower learners could find it distracting and disorganizing. For these slower learners, you will need to provide a well-structured management system within which they can work.

The techniques found to be generally effective with slower learners can be applied to CBI programs. In addition, you should consider the following recommendations if your program is individualized and modularized: (1) make audio cassette recordings (in your own voice) of the required readings in the modules so that poor readers will be able to maintain reasonable progress; (2) add extra opportunities for practice and drill for students who need the necessary repetition in order to retain the skill; (3) provide additional time to learn (perhaps late in the school day or at night) for students who work slowly; (4) develop visual materials (e.g., videotape recordings, slide/tape presentations) of the skills and processes covered in the modules to help students who have difficulty visualizing or handling abstract concepts; and (5) occasionally permit a slower student to temporarily skip or change a module if there are other interesting things going on in the classroom or laboratory.

The more capable students in a CBI program should have instruction planned for their special abilities. In general,

capable students appreciate the freedom afforded by the CBI approach to move ahead at their own speed and not be held back by the rest of the group. This advantage should be maximized, and precautions taken to prevent the student from becoming bored or frustrated. When working with an especially capable student in a CBI program, (1) provide opportunities for the student to refine and advance his/her skills beyond the minimal level of proficiency specified in the modules; (2) plan for enriching activities that extend a greater challenge to the capable students; (3) utilize the student's abilities by having him/her tutor or assist other students, thus providing a real opportunity to test his/her own competence; (4) allow the student to progress beyond the series of skills identified for the course and into more advanced areas; and (4) in an open entry/open exit program, encourage the rapid student to complete the program early and move into the occupation.

Providing these sorts of materials, activities, and opportunities for students of varying capabilities requires that you and your CBI program be well organized. The record-keeping procedures, modifications in physical facilities, resource center design and operation, and preparation to use modules, discussed earlier, will all come into play as you assist individual students in achieving the necessary competencies.

You may wish to arrange through your resource person to visit a vocational program in your service area in which CBI is being used. During your visit, you could --

- examine the resource center, if one exists, to see how it is organized and equipped
- view the physical facilities and layout of the classroom and/or laboratory to see how (or if) they have been modified to facilitate the use of CBI
- observe students "in action" in a CBI program
- examine, with the teacher's permission, any record-keeping forms, progress charts, etc.
- observe the management procedures used in the assessment of students' performance
- discuss with the teacher the problems he/she encountered (and the solutions he/she devised) in organizing and managing his/her CBI program.

The following items check your comprehension of the material in the information sheet, Managing the Competency-Based Vocational Program, pp. 7-22. Each of the five items requires a short essay-type response. Please explain fully, but briefly, and make sure you respond to all parts of each item.

SELF-CHECK

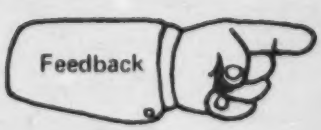
1. What are the major problems, as you understand them, that confront the teacher in organizing a vocational program using the competency-based approach as compared to a conventional program?

2. Why is a good student record system so important to the success of a vocational program implementing CBI?

3. Briefly describe the advantages and disadvantages of each of the three possible locations for a student resource center in a school where CBI programs are in operation: i.e., (1) central, (2) near a cluster of vocational programs, or (3) within the specific vocational program itself.

4. If you visited a vocational education program that had a reputation as being an excellent example of a well-run CBI program, what are some of the things you would expect to find the teacher and students doing?

5. How would you respond to a school administrator who said that "competency-based instruction is probably a good way to improve vocational education, but it would cost an awful lot of money to install and keep it in operation...it's out of the question."



Compare your written responses on the Self-Check with the Model Answers given below. Your responses need not exactly duplicate the model responses; however, you should have covered the same major points.

MODEL ANSWERS

1. While it is unwise to overemphasize the "problems" faced by vocational teachers in installing competency-based instruction, it is very wise to face them realistically so as to be well prepared. Probably the biggest problem for teachers is the fact that in a CBI program students will probably be working at a variety of tasks, they will be at quite different places in their planned programs, and they will be progressing at varying rates. While vocational teachers have long worked with students as individuals, this heavily individualized type of program is unique in the demands it places on the teacher to assist students in their progress.

   Related to this is the necessity to keep accurate and detailed records of each student's accomplishment of every competency. Each student must be evaluated as he or she performs each competency or group of competencies. A checklist or scale is used and the results recorded. This is of a different order of complexity than the conventional program's grading of uniform projects and the administration of tests given to the whole group at the end of six weeks.

   There are also some problems of routine management that a conventional program does not have, such as distributing and controlling the modules or learning packages, and providing a resource center in which students can work on many of the cognitive aspects of the competencies. Possibly one of the most difficult problems will be for the teacher himself/herself to make the change from the role of giver of information to manager of student learning.

2. One of the basic principles of CBI is that students complete the training program when (and only when) they have demonstrated the ability to perform all of the stipulated occupational competencies. It is vitally important, therefore, that an accurate record be kept of the student's achievement of each competency so that both the student and the teacher know exactly what has been accomplished and what is still to be done. The record of competencies achieved usually becomes part of the official transcript that is used by prospective employers or other educational institutions.

Carefully kept records are also necessary to help the teacher monitor the progress of each student. The teacher should know by looking at the records whether a student may be slowing down, losing interest, or obstructed by a learning problem. This allows the teacher to take the proper steps of providing extra motivation or giving some special assistance to the student. This is an especially critical element in a CBI program, because it is relatively easy for the teacher to lose track of the work of any one student in a class of many.

3. There seems to be no single best location for resource centers in schools having competency-based vocational programs. School administrators and instructors differ among themselves in their ideas for the solution to this problem. The central location, in which one large resource center serves all CBI programs, is probably the least costly and easiest to keep well managed under the control of a professional librarian or aide. In addition, it may make it possible to provide extensive facilities for students to work in. However, the central location makes it difficult for a student to get an instructor's help in solving technical problems, and discourages use by students as they work through laboratory activities--just when they may need to use it most.

   The cluster concept attempts to deal with some of these objections by locating a resource center in close proximity to several vocational programs. Such a resource center can be reasonably convenient for students in the various programs. It can be well equipped and staffed by a trained person, and the vocational teacher can come in to help students with their work. There is still the difficulty of having students go outside of the laboratory, and of the staff of the center not being able to provide much technical assistance. Some materials or equipment used by many programs may still have to be housed in a central location.

   Many instructors in CBI programs like the idea of having their resource center right within the program laboratory. Here they have full control and can work right with their students. This does require the instructor to manage the resource center personally. There is also the ever-present problem of noise, dirt, and distraction to be contended with in such an arrangement.

4. You would expect to find every student at work, though at many different tasks. Each student would probably have a module or learning package nearby, occasionally referring to it or reading from it. There would be students working alone, others perhaps in small groups. The instructor would very likely be talking to individual students, giving a mini-lesson or answering a question. You might see the

instructor take out a checklist, watch a student go through an operation, and then confer with the student about the performance. It might appear to you that some students were missing...if you looked around you might find them studying or looking at a slide/tape presentation in the resource center. At the front of the room two students might be seen examining the class progress chart to determine how they are progressing, then going to get another module.

As the class period comes to a close, students would gather their instructional materials together. Some might take a module along with them to work on, others might place their module in a cubicle assigned to them, ready for work the following day. Probably the most lasting impression would be that every student seems to know what he or she is expected to do, and all the students appear to be going about their work in an orderly and enthusiastic way.

5. It is probably generally true that some aspects of installing a CBI program call for some extra expenditure of money. Depending on the program, this need not be an exhorbitant amount, however. The biggest "start-up" costs will no doubt be in getting the instructional materials, whether they are to be purchased or developed within the school. Setting up a resource center will usually be an additional expense, primarily because of the media equipment it requires. If the latest plush accommodations are installed, a good deal of money can be spent in this way.

   Vocational teachers, however, have long been known for their resourcefulness. They can construct storage facilities out of boxes and shelving. They can set up study spaces from borrowed tables. Once the CBI program is underway, vocational teachers usually have no trouble in keeping it functioning within about the same budget as a conventional program. When teachers begin to see the results come in, they are happy to expend the added effort to keep it functioning smoothly. When administrators see the improvement in the program, they seem to be able to find the necessary resources from somewhere.

LEVEL OF PERFORMANCE: Your completed Self-Check should have covered the same major points as the model responses. If you missed some points or have questions about any additional points you made, review the material in the information sheet, Managing the Competency-Based Vocational Program, pp. 7-22, or check with your resource person if necessary.

Learning Experience II

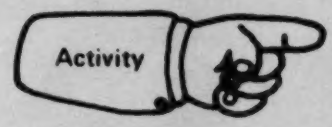
OVERVIEW

Given a case study describing how a teacher organized and managed his vocational program for CBI, critique the performance of that teacher.

You will be reading the Case Study, pp. 33-34, and writing a critique of the performance of the teacher described.

You will be evaluating your competency in critiquing the teacher's performance in organizing and managing his vocational program for CBI by comparing your completed critique with the Model Critique, pp. 35-37.

You may wish to work with a group of peers to plan management procedures for a CBI program in your occupational specialty.



Read the following Case Study describing what a vocational teacher observed when she visited a vocational laboratory in which the competency-based approach to instruction was being used. Assuming that the classroom teacher has asked Ms. Hanley for some constructive criticism concerning the organization and management of his CBI program, explain in writing (1) the strengths of the teacher's management procedures, (2) the weaknesses of the teacher's management procedures, and (3) what the teacher can do to improve the organization and management of his CBI program.

CASE STUDY

The first thing Ms. Hanley noticed when she walked into Mr. Garcia's laboratory was the variety of activities students were engaged in. Two students were role-playing a conversation between a service mechanic and a dissatisfied customer. Several students were in the spacious resource center located at one end of the laboratory behind acoustical screens. A small group sat around a table discussing some reading they were doing. At another table, some students were writing in their modules. Others were in study carrels along one wall of the area. In the laboratory area, one student was practicing adjusting a carburetor, referring to a checklist in the module he had lying open on the bench. Three students awaited their turn.

While Ms. Hanley waited for Mr. Garcia to finish talking to a student in what appeared to be a counseling area, she went to the file cabinets and quickly located some modules of particular interest to her which students would be working on in the future. A student who was on his way to view a slide/tape took time to show her the compartment in which he kept the modules on which he was currently working.

Ms. Hanley sat down in the counseling area after Mr. Garcia finished his conversation, but decided to wait until class ended to speak to him. It looked as though he'd be tied up for the whole period, answering questions. Glancing around the lab, Ms. Hanley noticed that the students who had been writing in their modules, and those who'd been discussing their reading, were now sitting and talking. She walked over to see what kinds of resources the center contained, and overheard part of their conversation about an upcoming football game. Apparently they were all waiting for the return of the slide/tape which the student Ms. Hanley had spoken to earlier was viewing in his study carrel.

Leaving the resource center, Ms. Hanley saw Mr. Garcia surrounded by a group of students who were ready to be evaluated on their skill in adjusting carburetors. He congratulated them on their progress, but told them they would have to wait until the other students were finished practicing, after which he needed to check the project plans of a student who needed his assistance before he could proceed. The group wandered away to join the football discussion in the resource center.

Ms. Hanley examined some modules until she heard Mr. Garcia rounding up the students who were ready to attempt to test out on carburetor adjustment. She was very interested in seeing the performance evaluation in action, so she joined the group. Mr. Garcia asked one student who was still practicing to find something else to do while he gave the final assessments, and instructed the other students to move to one side as the first of them performed the skill. Mr. Garcia watched carefully, filled out the assessment form in the module, and was beginning to discuss with the student the need for some recycling activities when the bell rang.

Mr. Garcia then told the other students that he'd get to their final assessments as soon as he could the next day. Ms. Hanley had a lot of questions she wanted to ask Mr. Garcia, but she had to wait until he'd spoken to some students who came up after class to ask what they should do about not getting to see that slide/tape yet.

Compare your completed written critique of the Case Study with the Model Critique given below. Your response need not exactly duplicate the model response; however, you should have covered the same major points.

MODEL CRITIQUE

Ms. Hanley learned at least one thing during her visit--how to wait. Unfortunately, Mr. Garcia's students seem to be learning the same lesson; and although patience may be a virtue, it shouldn't be all that necessary in a well-organized and efficiently managed CBI program.

Before talking about the weaknesses, however, it's possible to say some very positive things about Mr. Garcia's management of his CBI program. First of all, the physical facilities seem excellent (with one exception, which will be discussed later). Students were all engaged in a variety of activities which required that they have access to study tables, work and counseling areas, individual study areas, laboratory equipment, and media equipment. Mr. Garcia apparently has set up the resource center and the rest of the laboratory to provide for these needs. In addition, the resource center is conveniently located, outside the main traffic of the laboratory, behind acoustical screens to cut down the noise level.

Mr. Garcia has also set up a module file, easily accessible and apparently well organized and clearly labeled (Ms. Hanley seemed to have no trouble finding what she was looking for). Students have individual compartments for storing modules currently in progress.

All of this, plus the fact that Mr. Garcia is at least trying to be available to assist students with varying needs at varying stages of progress, indicates that Mr. Garcia has not imposed a lock-step organization on his students in order to cope with managing the demands of a CBI program. However, it is clear that Mr. Garcia needs to do more and better planning in terms of organization and management procedures if his students are going to make steady progress.

Mr. Garcia's main problem seems to be a failure to plan ahead to meet the needs of students who are not all at the same place at the same time. With better planning, students would not have needed to sit around waiting for a slide/tape to become available (or for a chance to practice on the carburetor). With better planning, students who were ready to have their performance assessed would not have had their progress stopped cold.

LEVEL OF PERFORMANCE: Your completed critique should have covered the same major points as the model response. If you missed some points or have questions about any additional points you made, review the material in the information sheet, Managing the Competency-Based Vocational Program, pp. 7-22, or check with your resource person if necessary.

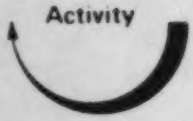
You may wish to meet with a group of peers who are also taking this module to discuss and plan management procedures for a CBI program in your occupational specialty. Specifically, you could --

- develop a list of items you might need in a resource center for a CBI program in your occupational specialty
- discuss the best location for the resource center
- plan how best to arrange the physical facilities given the needs and constraints of your occupational specialty
- discuss any special management problems that might arise in a CBI program in your occupational specialty

Learning Experience III

FINAL EXPERIENCE

In an actual school situation,* organize the vocational program to install competency-based instruction.



Develop plans and implement management procedures for installing competency-based instruction in the vocational program in which you are working. Include in your plans and procedures the following elements of competency-based instruction:

- a resource center for student use in working on modularized materials, including media and equipment
- procedures and forms for keeping records of student progress and achievement in their competency-based program
- organization or reorganization of the physical facilities of the classroom and laboratory to best accommodate competency-based instruction
- storage and management of student instructional materials
- plans for working with students of several levels of achievement and rates of learning

continued

*For a definition of "actual school situation," see the inside back cover.

NOTE: Due to the nature of this experience, you will need to have access to an actual school situation over an extended period of time (e.g., four to six weeks).

As you complete each of the above activities, document your actions (in writing, on tape, through a log) for assessment purposes.

Arrange in advance to have your resource person review your documentation and observe your management procedures in operation in the classroom. Your total competency will be assessed by your resource person, using the Teacher Performance Assessment Form, pp. 41-43.

Based on the criteria specified in this assessment instrument, your resource person will determine whether you are competent in organizing a vocational program to install competency-based instruction.

TEACHER PERFORMANCE ASSESSMENT FORM

Organize the Vocational Program to Install Competency-Based Instruction (K-2)

Directions: Indicate the level of the teacher's accomplishment by placing an X in the appropriate column under the LEVEL OF PERFORMANCE heading. If, because of special circumstances, a performance component was not applicable, or impossible to execute, place an X in the N/A column.

In establishing a resource center for student use, the teacher:	LEVEL OF PERFORMANCE					
	N/A	NONE	POOR	FAIR	GOOD	EXCELLENT
1. selected the best available location to provide the following characteristics:						
a. convenient for students.....						
b. reasonably quiet and free from distractions.....						
c. allows for teacher supervision and assistance.....						
2. provided sufficient space and storage facilities for the size and type of program.....						
3. provided for the appropriate types and amount of media equipment.....						
4. provided work tables, study carrels, and counseling areas as required by the program.....						
5. organized the resource center to ensure that there is sufficient student assistance and control at all times.....						

	N/A	NONE	POOR	FAIR	GOOD	EXCELLENT
In organizing for the day-to-day management of the CBI program, the teacher:						
6. developed a system for the storage, control, and distribution of the instructional modules.....						
7. developed a student progress and achievement reporting system that:						
a. is relatively convenient to maintain.....						
b. is available and comprehensible to students.....						
c. indicates the total program and status of each individual.....						
8. developed an official record-keeping system that provides data on the competencies, ratings, and rate of progress of each individual student.....						
9. developed procedures for assessing students on each specified competency when the student is ready.....						
10. rearranged tools, equipment, and other physical facilities as needed to facilitate the operation of the CBI program...						
11. developed instructional planning procedures so as to provide for the individual learning needs of students at various stages of achievement.....						
In providing for the instruction of students with different rates of achievement, the teacher:						
12. arranged for additional instructional time for slower learners.....						
13. developed practice and drill activities for slower learners.....						

	N/A	NONE	POOR	FAIR	GOOD	EXCELLENT
14. developed special challenging learning activities for more capable learners....						
15. provided for more capable learners to achieve higher level skills and/or higher levels of proficiency in required skills.....						
16. worked with school administration to permit students to complete and exit from the program when they have achieved the required competencies.....						

LEVEL OF PERFORMANCE: All items must receive N/A, GOOD, or EXCELLENT responses. If any item receives a NONE, POOR, or FAIR response, the teacher and resource person should meet to determine what additional activities the teacher needs to complete in order to reach competency in the weak area(s).

ABOUT USING THE CENTER'S PBTE MODULES

Organization

Each module is designed to help you gain competency in a particular skill area considered important to teaching success. A module is made up of a series of learning experiences, some providing background information, some providing practice experiences, and others combining these two functions. Completing these experiences should **enable** you to achieve the **terminal** objective in the final learning experience. The final experience in each module always requires you to demonstrate the skill in an actual school situation when you are an intern, a student teacher, or an inservice teacher.

Procedures

Modules are designed to allow you to individualize your teacher education program. You need to take only those modules covering skills which you do not already possess. Similarly, you need not complete any learning experience within a module if you already have the skill needed to complete it. Therefore, before taking any module, you should carefully review (1) the Introduction, (2) the Objectives listed on p. 4, (3) the Overviews preceding each learning experience, and (4) the Final Experience. After comparing your present needs and competencies with the information you have read in these sections, you should be ready to make one of the following decisions:

- that you do not have the competencies indicated, and should complete the entire module
- that you are competent in one or more of the enabling objectives leading to the final learning experience, and thus can omit that (those) learning experience(s)
- that you are already competent in this area, and ready to complete the final learning experience in order to "test out"
- that the module is inappropriate to your needs at this time

When you are ready to take the final learning experience **and** have access to an actual school situation, make the necessary arrangements with your resource person. If you do not complete the final experience successfully, meet with your resource person and arrange (1) to repeat the experience, or (2) complete (or review) previous sections of the module or other related activities suggested by your resource person before attempting to repeat the final experience.

Options for recycling are also available in each of the learning experiences preceding the final experience. Any time you do not meet the minimum level of performance required to meet an objective, you and your resource person may meet to select activities to help you reach competency. This could involve (1) completing parts of the module previously skipped; (2) repeating activities; (3) reading supplementary resources or completing additional activities suggested by the resource person; (4) designing your own learning experience; or (5) completing some other activity suggested by you or your resource person.

Terminology

Actual School Situation . . . refers to a situation in which you are actually working with, and responsible for, secondary or post-secondary vocational students in a real school. An intern, a student teacher, or an inservice teacher would be functioning in an actual school situation. If you do **not** have access to an actual school situation when you are taking the module, you can complete the module **up to** the final learning experience. You would then do the final learning experience later; i.e., when you have access to an actual school situation.

Alternate Activity or Feedback . . . refers to an item or feedback device which may **substitute** for required items which, due to special circumstances, you are unable to complete.

Occupational Specialty . . . refers to a specific area of preparation within a vocational service area (e.g., the service area Trade and Industrial Education includes occupational specialties such as automobile mechanics, welding, and electricity).

Optional Activity or Feedback . . . refers to an item which is not required, but which is designed to **supplement** and enrich the required items in a learning experience.

Resource Person . . . refers to the person in charge of your educational program; the professor, instructor, administrator, supervisor, or cooperating/supervising/classroom teacher who is guiding you in taking this module.

Student . . . refers to the person who is enrolled and receiving instruction in a secondary or post-secondary educational institution.

Vocational Service Area . . . refers to a major vocational field: agricultural education, business and office education, distributive education, health occupations education, home economics education, industrial arts education, technical education, or trade and industrial education.

You or the Teacher . . . refers to the person who is taking the module.

Levels of Performance for Final Assessment

N/A . . . The criterion was not met because it was **not applicable** to the situation.
None . . . **No attempt** was made to meet the criterion, although it was relevent.
Poor . . . The teacher is unable to perform this skill or has only **very limited ability** to perform it.
Fair . . . The teacher is unable to perform this skill in an acceptable manner, but has **some ability** to perform it.
Good . . . The teacher is able to perform this skill in an **effective** manner.
Excellent . . . The teacher is able to perform this skill in a **very effective** manner.